



Recommendations of the 2017 Informal Water & Wastewater Retail Rate Structure Stakeholder Group



Two 5.2 megawatt gas turbine generators convert the methane gas byproduct of wastewater treatment into electricity. One of the two is scheduled to be rebuilt in 2018. Village Creek Water Reclamation Facility generates more than half of its own energy demand.

August 16, 2017





Report:
**2017 Water & Sewer Retail Rate Structure Stakeholder Group Meetings and
2018 Rate Recommendations**

Since 1993, the City of Fort Worth Water Department annually has assembled a customer stakeholder group to explore any changes that may be needed in the Water Department's water and sewer rate structures. The stakeholder group reviews the department's revenue requirement and proposed rate structure changes to ensure proposed changes are fair and equitable for all customer classes.

This report includes the Retail Rate Structure Stakeholder Group's input to the Water Director regarding rate structure and the Water Director's 2018 rate recommendations to the City Council. Final rate-setting authority lies with the City Council. Direction provided during the City Council's budget workshops could change the proposed rates.

The Water Department is funded solely by its rates and fees; no tax revenue is received. The rate and fee revenue must be sufficient to meet operations and maintenance, debt service and capital requirements, established cash reserve or fund balance targets, and legal debt service coverage requirements.

The Water Department's balanced FY2018 proposed budget is \$19,349,105 or 4.5 percent more than the FY2017 budget. Many factors are contributing to the increases and these are detailed later in the report.

The group's evaluations were based on system-wide revenue requirement increases of about \$10.7 million for water and about \$8.5 million for sewer. The proposed rate changes vary by customer class. For residential customers, monthly water use will impact the amount of the increase experienced. These proposed increases result in a 5.6 percent increase, or \$3.31, in the average residential monthly bill for water and sewer service combined.

A copy of this report has been placed in each community library and is posted on the Water Department website at www.fortworthtexas.gov/water. All citizens and water customers are invited to provide written comments.

Please send written comments to:

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Comments must be received on or before noon on Wednesday, September 7, 2017. The City Council may act on the recommendations as early as Tuesday, September 12, 2017.

Questions may be directed to Mary Gugliuzza, media relations and communications coordinator with the Fort Worth Water Department, at 817-392-8253 or wpe@FortWorthTexas.gov.

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Stakeholder group process and members

The Water Department wants to ensure that the interests of all customers are represented during the rate structuring process. Each year the department conducts a “cost-of-service” study to determine how much it costs to serve each customer class. Cost of service may change from year to year because the characteristics of each class can change as new customers come into the system and others leave the system. The study can show some customer classes pay more than it actually costs to provide service to them, while others do not cover the cost of providing service to them. Customer input is sought to ensure equity in any restructuring that is done.

The stakeholder group reviews the Water Department’s cost studies, portions of its budget and projections for the future before forming its recommendations.

The Retail Rate Structure Stakeholder Group met four times – June 5, 12, 26 and July 10. The group is comprised of representatives from the various retail customer classes. Members are recommended to the Water Department Director to be a representative cross-section of the Department’s customers and volunteer their time to serve.

<u>Name</u>	<u>Customer Class</u> <u>Water</u>	<u>Customer Class</u> <u>Sewer</u>	<u>Company</u>
Lairy Johnson	Super User	Monitored	MillerCoors LLC
Lee Mathewson	Super User	Monitored	Lockheed Martin
Mike Cook	Irrigation	None	Mike’s Garden Centers
Daniel Ruddock	Industrial	Monitored	Alcon
Matt Elgin	Commercial/ Irrigation	Non-monitored	Southwestern Baptist Theological Seminary
Craig Schkade	Commercial/ Irrigation	Non-monitored	Hillwood Properties
Thomas Ames	Residential	Residential	
Sally Burt	Residential	Residential	
Russell Fuller	Residential	Residential	
Daniel Haase	Residential	Residential	

Overall principles

- The rates for each customer class (Residential, Commercial, Industrial, Super User and Irrigation) should be based on the actual cost of providing service to that class. This is to ensure that each customer class pays its fair share of the cost of providing water and sewer service. (The exception to this is the rate for gas well drilling which is a market rate, benchmarked with the rates charged by other water providers for this use.)
- Bringing all customer classes to cost of service is the stated goal of the stakeholder group. Any increase should be achieved by avoiding excessive rate increases for any particular class of customers. Past stakeholder groups have decided that no class increase should exceed twice the system increase.
- Maintain stable rates.
- Community values and policy considerations should also guide rate design.

Goals for water and sewer rate structures

Equity — The rates must be fair for all customer classes.

Financial integrity — The rates must ensure the water and wastewater utility is in a sound financial position.

Legal/conservation — The rates must meet all legal requirements, including requirements that the utility meet conservation guidelines established by the Texas Water Development Board.

Realism — The rates must be practical to implement.

Revenue stability — As much as possible, the rates must provide stable revenue from year to year.

Responsible to society — The rates should take into account any societal needs unique to Fort Worth.

Understandable — The rates shouldn't be so complex that they are difficult to explain to customers and don't provide the desired pricing signals.

Water terminology/Glossary

The following definitions will help in understanding terms used in this report.

Administrative Services Fee – Fee paid by non-General Fund departments to the General Fund for administrative and other indirect services provided, such as legal, financial and human resources.

BOD (Biochemical Oxygen Demand) – A characteristic of wastewater that can make it more expensive to process at the water reclamation facility. Industries that have wastewater with a high BOD level are classified as having “high-strength” wastewater.

Cubic Feet (cf) – The unit of measure the Fort Worth Water Department uses to measure water use. CCF = 100 cubic feet; 1 CCF = 748.1 gallons

Fiscal Year (FY) – The annual budget period. For the City of Fort Worth, the fiscal year starts Oct. 1 and ends the following Sept. 30.

MGD – million gallons per day

Payment in Lieu of Taxes (PILOT) – The PILOT is paid to the General Fund to offset the ad valorem taxes lost because of the non-profit status of the Water and Sewer system. PILOT is calculated by applying the effective property tax rate to the net book value of plant and property allocated to the retail portion of the Water and Sewer system: (Plant assets - Accumulated Depreciation + Work in Progress) x Current Tax Rate

Rate Classes – Customers place different demands on water and sewer systems, and these demands have long-term effects on the system. Customers are grouped together into “classes” based on similar usage characteristics. Costs are then allocated to each class based on its impact on the system. Fort Worth has six retail water customer classes and three retail sewer customer classes.

- **Retail Customer** – Customers served directly by the utility to meet their own use requirements.
- **Residential Class** – Individual customers who buy water for their homes. (Water and Sewer)
- **Commercial Class** – Customers who buy water for their business; water is generally not used in the manufacturing process. (Water)
- **Industrial Class** – Customers who use water in the manufacturing process. (Water)

- **Super User Class** – Customers using more than 30 million cubic feet a year through a single meter and whose usage in any month does not vary from the average monthly use by more than 50 percent. (Water)
- **Irrigation Class** – Customers who buy water for use on landscape; served by a dedicated water meter. (Water)
- **Gas Well Drillers** – Customers who purchase water for use in hydraulic fracturing. (Water)
- **Commercial and Industrial Non-Monitored Customers** – Customers whose use of wastewater services generally does not have an abnormal impact on the solids content of the wastewater system, such as office buildings and schools. (Sewer)
- **Commercial and Industrial Monitored Customers** – Wastewater customers in the non-residential customer classes (i.e., restaurants and industrial plants), whose wastewater is monitored for BOD and TSS strength. These businesses pay a wastewater surcharge based on their wastewater “strength” (the amount of BOD or TSS in the sewage).
- **Wholesale Customer** – Customers who purchase water to resell within their own municipality or service area.

Street Rental – Street Rental fees are paid on revenue derived from pipelines in the public rights-of-way, similar to franchise fees paid by outside/for-profit utilities. Street Rental fees are calculated using 5 percent of all gross service revenues for water and sewer except for gross service revenues from wholesale wastewater contracts, which are calculated using 4 percent until new contracts are approved in 2017 raising it to 5 percent.

TSS (Total Suspended Solids) – A characteristic of wastewater that can make it more expensive to process at the water reclamation facility. Industries that have wastewater with a high TSS level are classified as having “high-strength” wastewater.

Volume – Three-dimensional measurement of a liquid/water

Wastewater – Sewage before it is treated

Water – Treated or potable water that is fit for human consumption

Winter Quarter Average (WQA) – The method for calculating wastewater volumes for residential accounts. Because residences are not metered for wastewater service, each customer’s three months of winter water usage (December, January and February) are averaged to set a baseline volume for domestic service. That calculated volume is used for billing purposes for the remainder of the year.

Proposed Water & Sewer Fund Budget

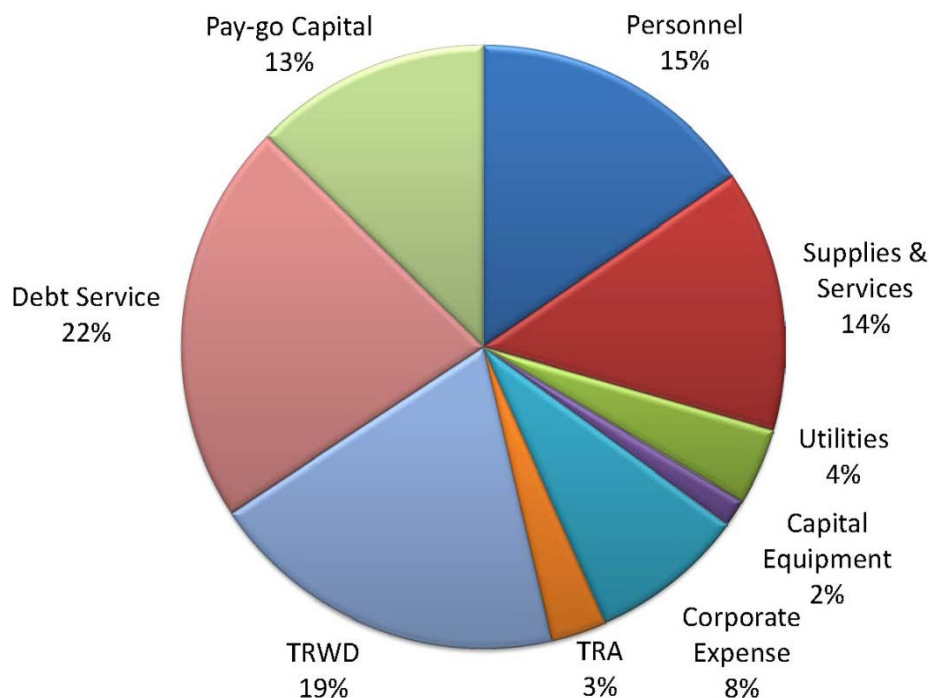
The Water Department's balanced FY2018 proposed budget totals \$453,924,440. It is \$19,349,105 or 4.5 percent more than the FY2017 budget. The chart below illustrates how the expenses are allocated.

The categories with the largest increases are cash financing of capital projects and debt service, personnel and contractual costs, professional services, vehicle and equipment purchases, transfers to the General Fund, residential meters, and chemical purchases. The city's growth and maintenance on aging water and wastewater facilities are factors for proposed increases in several categories.

While raw water costs have been a major factor in budget increases in the past several years, raw water costs are projected to go down slightly in 2018. This is a one year anomaly, as Tarrant Regional Water District's rate projections, combined with a small increase in projected growth, indicate a 23 percent cost increase by 2023.

The proposed budget includes a \$3.7 million reduction in the budgeted contribution to reserves. The reduction is made possible by strong financial performance and an anticipated additional contribution to reserves in the current fiscal year.

FY2018 Proposed Expenditures



Factors affecting the Fiscal Year 2018 budget

Growth

The boom in new construction means more water meters need to be purchased and installed. With more people comes more water use, meaning more chemicals are needed to treat the water. There are also more engineering plans to review and new construction to inspect. The proposed budget has an additional \$549,110 for meters, \$380,055 for chemicals and \$327,011 for four new positions to deal with the increased development activity and its effects on the water and wastewater systems. These positions will improve customer service levels on development document reviews, provide additional construction inspection resources and address growth in the water distribution and collection systems.

The proposed budget increases by \$1,039,825 for professional services to support operational efficiencies and define future capital needs.

Aging Infrastructure

Accommodating new growth cannot be done by ignoring existing infrastructure, and this consists of more than the pipes in the streets. Contractual costs have a proposed increase of about \$2.8 million. This includes the rebuilding of two belt presses and required maintenance on a gas turbine at the water reclamation facility. The facility has two 5.2 megawatt turbines that convert the methane gas byproduct into energy. The facility generates more than half of its energy needs, and the turbines are an essential part of that process. The contractual funding also includes funds to assist with emergency response to main breaks and water main condition assessments.

The proposed budget increases by almost \$2 million for additional vehicle and equipment purchases to address the aging fleet. The water department operates about 700 vehicles, heavy-duty trucks and construction equipment with an average age of nearly 11 years. As these vehicles and equipment age, repair costs increase to the point where it is more advantageous to replace them rather than continue to repair them.

Capital Project Financing

The water department will have issued \$163 million in new debt for the Water and Sewer Fund by the end of 2017. As a result, the FY2018 proposed budget includes almost a \$3.5 million increase for debt principal and interest payments. This expenditure increase will be partially offset by a projected increase in impact fee revenues for growth-related projects. The proposed budget also increases by \$5.0 million for additional cash financing of capital projects and to improve debt service coverage ratios.

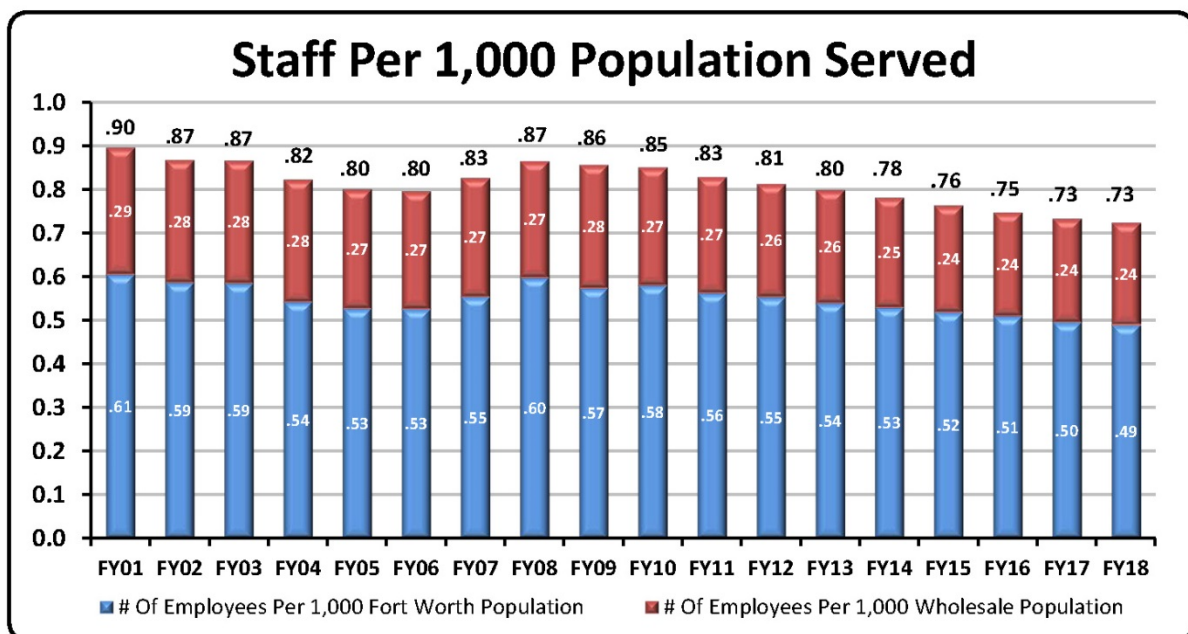
These financing increases support the City Council-adopted Capital Improvement Plan for the water department.

Staffing enhancements and personnel costs

In addition to the four positions mentioned above, the department is proposing to add six other positions at a cost of \$461,650. These positions are needed to:

- meet new regulatory compliance and reporting requirements
- manage capital facility needs at the water treatment plants based on criticality and reliability using the recently implemented asset management system
- provide additional resources to staff the SCADA operations center
- support the core technical systems of the MyH2O program required for full implementation

The table below graphs the number of authorized positions per 1,000 in population served, including Fort Worth and its wholesale customer cities. Additions to staffing were made in 2007-2008 to meet the growing demand of the service area with additions to Field Operations and Customer Relations staffing. Since that time, the number of positions serving each 1,000 in population has steadily declined to the projected FY2018 ratio of .73 positions. As the population of the service area increases, this downward trend will continue unless additional staffing needs are addressed.



The FY2018 budget also includes a proposed increase of \$4,704,614 for salary and benefits costs to capture the adjustments for the proposed pay for performance incentive, increased health insurance costs, and to allow for increased overtime while the fund experiences high vacancies.

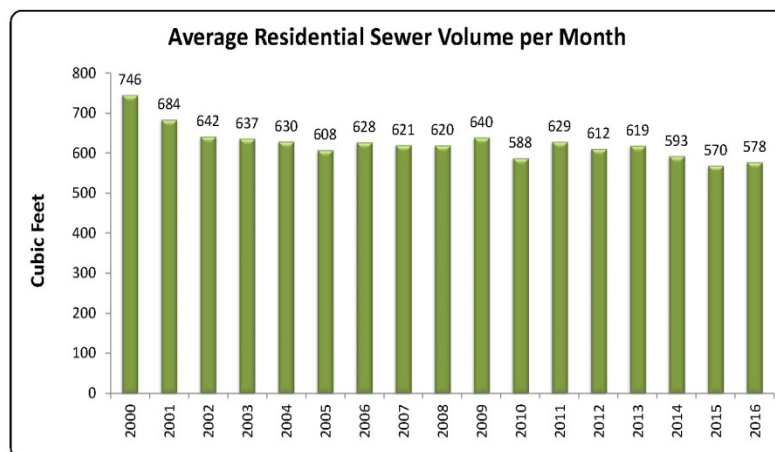
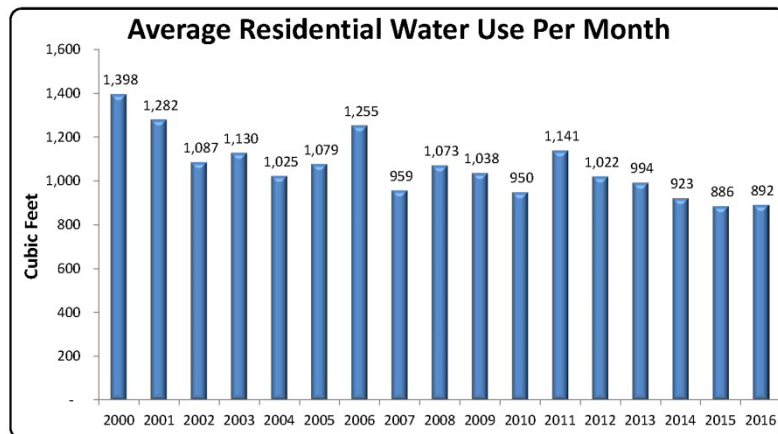
Transfers to the city's General Fund

Transfers to the General Fund are up almost \$1.7 million for street rental, PILOT and administrative services received from General Fund departments. Because street rental is a calculation of gross service revenues, the transfer increases as the revenues increase. The administrative services fee amount is provided to the department by the city's Budget Office.

Revenue Stability

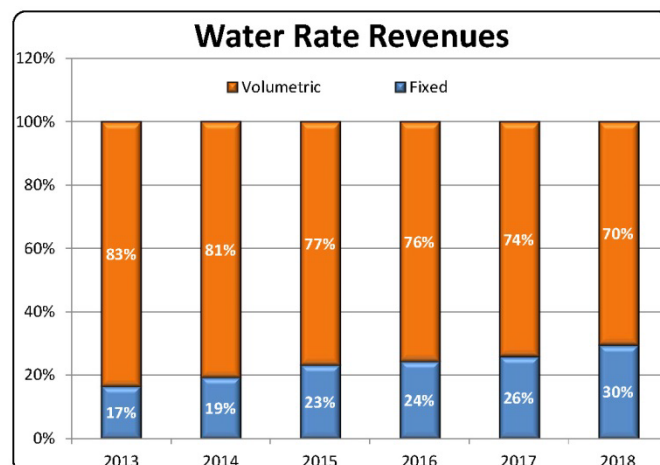
Moving to a higher percentage of fixed revenue collection is a utility industry trend that lessens dependence on weather conditions and improves stability in revenue collection and cash flow. Like most water utilities across the

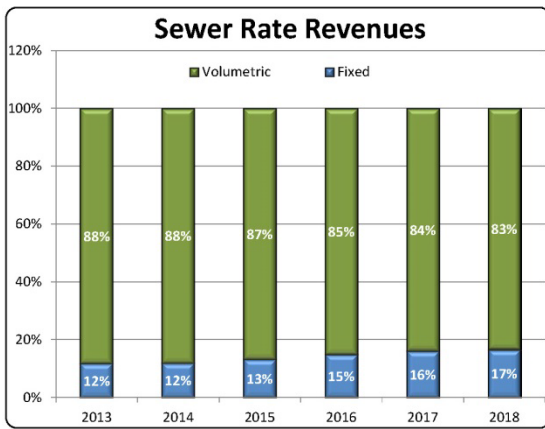
country, the Fort Worth Water Department recovers the majority of its revenue from the variable user volumetric charges, yet the majority of costs are fixed.



As the above chart shows, average monthly water use has declined by 36.2 percent from 2000 to 2016. The same downward trend is true for wastewater volumes, which have continued to decline because of more efficient water-using appliances. Average monthly residential wastewater volumes have declined by 22.5 percent since 2000, as shown in the chart to the left.

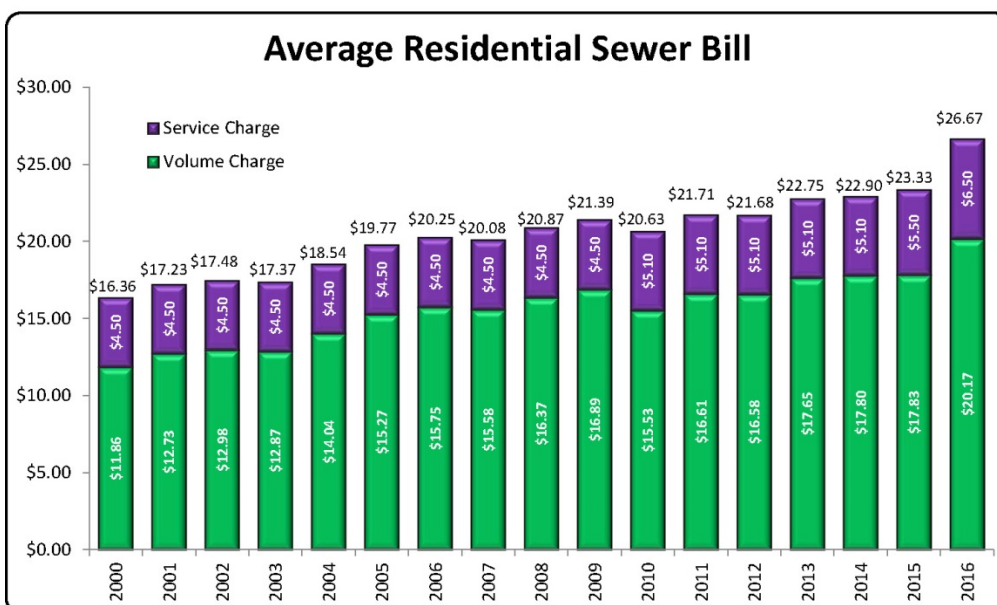
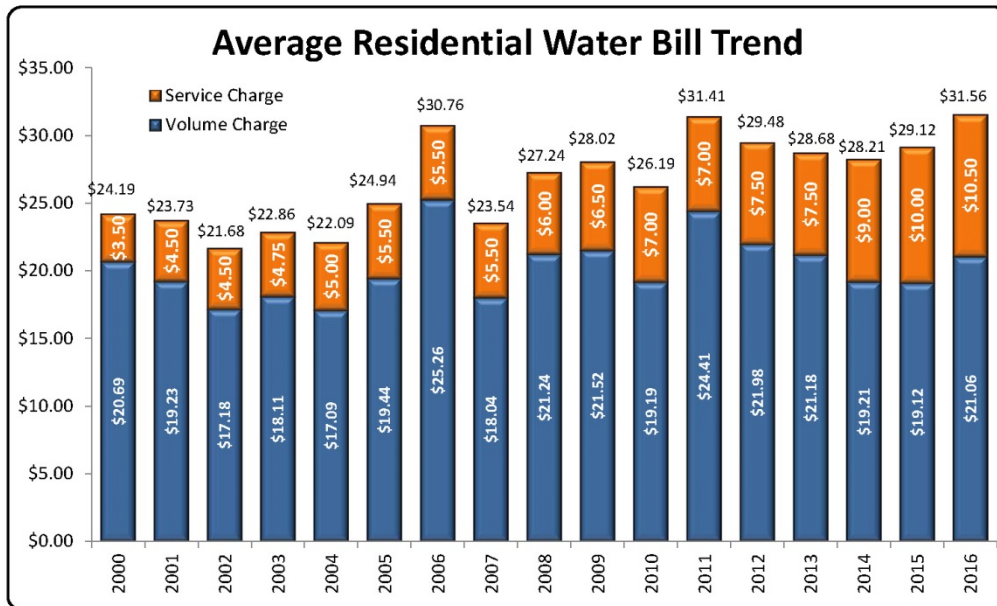
Since 2013 the department has phased in a multi-year plan to achieve a revenue ratio of 30 percent from fixed income sources and about 70 percent from variable income sources. This plan resulted from a study performed by an outside consultant retained by the water department. In 2018, the department will reach this goal with the proposed changes for water revenue, but not sewer revenue.





This shift to more revenue coming from fixed rather than variable income sources results in the service charge becoming a greater portion of the monthly bill. The rate revenue charts on this and the previous page reflect those shifts.

The charts below illustrate the impacts to the average residential bill since 2000. Each year's average bill is based on the average water and sewer volumes presented in the charts above.



Cost-of-service study results

A cost-of-service study determines how much it costs a utility to serve a particular group of customers. Rates for each customer class should recover the amount of money it takes to serve those customers. The exception is the gas well drilling rate which is based on rates for this market. Fort Worth Water Department staff completed the cost-of-service studies for both retail water and wastewater.

Water cost of service

Customer Class	Revenue at Current Rates	Cost Responsibility	Indicated % Change	Change In Dollars
Residential	\$97,257,566	\$106,095,896	9.09%	\$8,838,330
Commercial	\$49,808,934	\$50,349,719	1.09%	\$540,785
Industrial	\$8,323,309	\$8,326,817	0.04%	\$3,508
Super User	\$2,883,244	\$3,094,178	7.32%	\$210,933
Irrigation	\$20,839,818	\$17,468,921	-16.18%	-\$3,370,897
Gas Well Drillers	\$93,145	\$73,562	-21.02%	-\$19,584
Total	\$179,206,016	\$185,409,092	3.46%	\$6,203,076

Wastewater cost of service

Customer Class	Revenue at Current Rates	Cost Responsibility	Indicated % Change	Change in Dollars
Residential	\$73,294,921	\$78,590,812	7.23%	\$5,295,891
Non-Monitored Commercial & Industrial	\$55,261,291	\$54,855,091	-0.74%	-\$406,200
Monitored Commercial & Industrial:				
Volume & Fees	\$9,245,181	\$8,845,145	-4.33%	-\$400,035
BOD	\$4,897,534	\$4,598,436	-6.11%	-\$299,098
TSS	\$1,084,182	\$1,263,773	16.56%	\$179,592
Total	\$143,783,108	\$148,153,257	3.04%	\$4,370,150

Recommendations - Water Rates

- Move all class volume rates closer to cost of service.
- Minimize the impact to low income customers by having the first tier of residential rates act as a “lifeline” rate for domestic uses, such as bathing and cooking. The first tier rate remains unchanged from the 2017 rate.
- Implement the final year of the revenue stability plan to adjust the fixed/variable revenue ratio to the 30/70 ratio to improve revenue stability. This is achieved by shifting some peaking costs into the base fee and results in an increase in the monthly service charge across all customer classes.
- Set monthly service fees at cost of service.

Recommendations – Sewer Rates

- Set monthly service fees at cost of service.
- Set monthly volume rates at cost of service.
- Continue the multi-year plan to adjust the fixed/variable revenue to improve revenue stability for 2018. This results in an increase in the monthly service charge for all customer classes, except the smallest two meter sizes. These meters primarily serve residential customers.
- Adjust BOD and TSS rates to cost of service for monitored commercial and industrial customers.

Impact of Recommendations on Water Rates

Based on the recommendations, the average residential water bill would increase by \$1.46 per month under the proposed rates. *(See Exhibit A for more information on the impacts to average, efficient and large users.)*

Water Volume Rates			
Customer Class	Monthly Volume	Current Rate	Proposed Rate
Residential	first 6 CCF	\$2.12/CCF	\$2.12/CCF
	>6 to 18 CCF	\$2.93/CCF	\$2.97/CCF
	>18 to 30 CCF	\$3.69/CCF	\$3.79/CCF
	> 30 CCF	\$4.44/CCF	\$4.56/CCF
Commercial	All Volumes	\$2.67/CCF	\$2.54/CCF
Industrial	All Volumes	\$2.55/CCF	\$2.50/CCF
Super User	All Volumes	\$2.38/CCF	\$2.48/CCF
Irrigation	First 50 CCF	\$2.96/CCF	\$2.99/CCF
	>50 to 100 CCF	\$3.56/CCF	\$3.40/CCF
	> 100 CCF	\$4.44/CCF	\$4.25/CCF
Gas Well Drilling	All Volumes	\$5.85/CCF	\$5.85/CCF

Rates are per 100 cubic feet. CCF = one hundred cubic feet = 748.1 gallons

Monthly Water Service Charge		
Water Meter Size	Current Rate	Proposed Rate
5/8" x 3/4"	\$10.75	\$12.10
3/4" x 3/4"	\$11.00	12.35
1"	\$21.10	\$25.55
1 1/2"	\$39.15	\$48.00
2"	\$60.80	\$75.00
3"	\$160.10	\$198.40
4"	\$273.85	\$339.80
6"	\$580.80	\$721.45
8"	\$1,014.15	\$1,260.20
10"	\$1,519.75	\$1,888.75

Impact of Recommendations on Wastewater Rates

Based on the recommendations, the average residential sewer bill would increase by \$1.85 per month under the proposed rates. *(See Exhibit A for more information on the impacts to average, efficient and large users.)*

Customer Class	Current Rate	Proposed Rate
Residential	\$3.62/CCF	\$3.94/CCF
Non-monitored Commercial and Industrial	\$4.23/CCF	\$4.14/CCF
Monitored Commercial and Industrial	\$2.71/CCF	\$2.57CCF
BOD	\$0.2929/lb.	\$0.2750
TSS	\$0.1558/lb.	\$0.1816

Volume rates are per 100 cubic feet. CCF = one hundred cubic feet = 748.1 gallons

Monthly Sewer Service Charge		
Water Meter Size	Current Rate	Proposed Rate
5/8" x 3/4"	\$6.50	\$6.50
3/4" x 3/4"	\$6.80	\$6.80
1"	\$9.40	\$10.80
1 1/2"	\$16.20	\$18.75
2"	\$24.30	\$28.30
3"	\$61.50	\$72.15
4"	\$104.10	\$122.35
6"	\$219.05	\$257.80
8"	\$381.35	\$449.00
10"	\$570.70	\$672.15
12"	\$715.10	\$840.19

Exhibit A

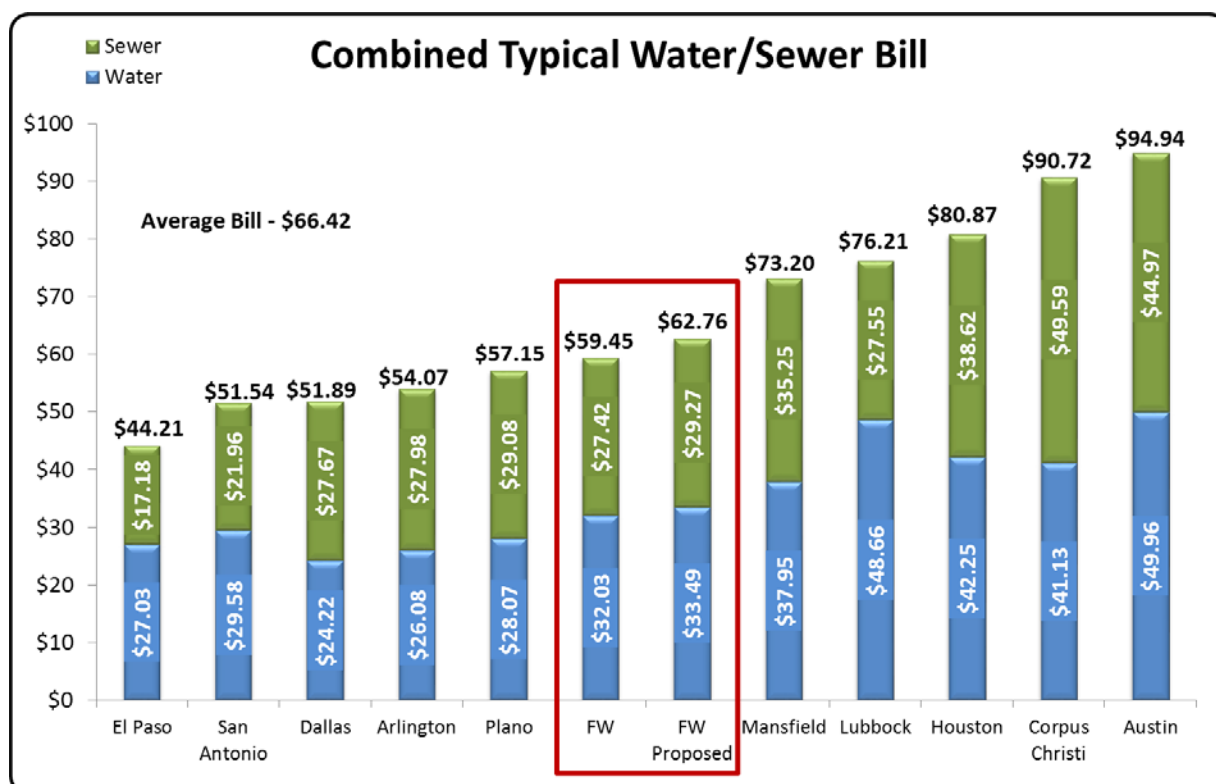
The following shows the projected bill changes for customers using various volumes of water.

Sample Monthly Residential Bill Comparison

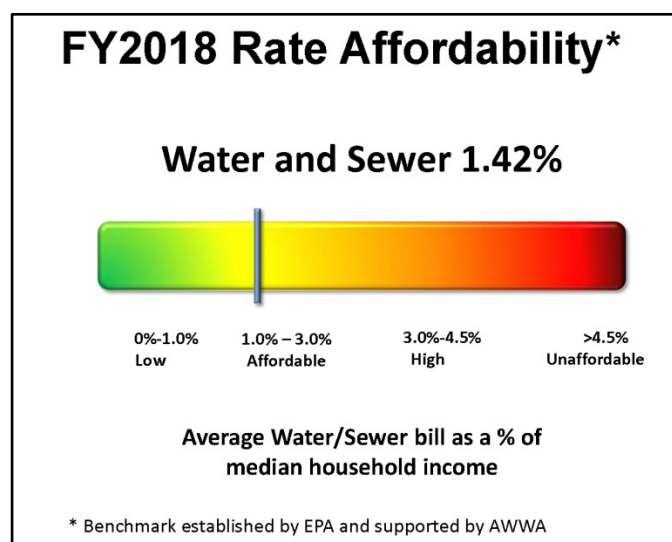
<u>WATER</u>		Average User		Efficient User		Large User	
CCF per Month		8.92 CCF		4.0 CCF		55.67 CCF	
Meter Size		5/8" x 3/4"		5/8" x 3/4"		1"	
		<u>2017</u>	<u>2018</u>	<u>2017</u>	<u>2018</u>	<u>2017</u>	<u>2018</u>
Service Fee		\$10.75	\$12.10	\$10.75	\$12.10	\$21.10	\$25.55
Volume Fee		\$21.28	\$21.39	\$8.48	\$8.48	\$206.12	\$210.88
Subtotal		\$32.03	\$33.49	\$19.23	\$20.58	\$227.22	\$236.43
Monthly Change		\$1.46		\$1.35		\$9.21	
Annual Change		\$17.52		\$16.20		\$110.52	
Annual percentage change		4.56%		7.02%		4.05%	
<u>SEWER</u>		Average User		Efficient User		Large User	
CCF per Month		5.78 CCF		3.00 CCF		30.00 CCF	
Meter Size		5/8" x 3/4"		5/8" x 3/4"		1"	
		<u>2017</u>	<u>2018</u>	<u>2017</u>	<u>2018</u>	<u>2017</u>	<u>2018</u>
Service Fee		\$6.50	\$6.50	\$6.50	\$6.50	\$9.40	\$10.80
Volume Fee		\$20.92	\$22.77	\$10.86	\$11.82	\$108.60	\$118.20
Subtotal		\$27.42	\$29.27	\$17.36	\$18.32	\$118.00	\$129.00
Monthly Change		\$1.85		\$0.96		\$11.00	
Annual Change		\$22.20		\$11.52		\$132.00	
Annual percentage change		6.75%		5.53%		9.32%	
		<u>2017</u>	<u>2018</u>	<u>2017</u>	<u>2018</u>	<u>2017</u>	<u>2018</u>
Combined Monthly Bill		\$59.45	\$62.76	\$36.59	\$38.90	\$345.22	\$365.43
Combined Monthly Increase		\$3.31		\$2.31		\$20.21	
Annual Increase		\$39.72		\$27.72		\$242.52	
Annual percentage change		5.57%		6.31%		5.85%	

Rate Comparison

The following chart compares cost of water and sewer for an average customer in Fort Worth to what that cost would be in other communities. Only existing 2017 rates are available for other communities, while both the actual 2017 and proposed 2018 rates are shown for Fort Worth.



Rate Affordability



Rate Affordability is an industry index established by the U.S. Environmental Protection Agency. It measures the average water and sewer bills and compares them to the median household income to show costs as a percent of income. You can see that even with the recommended residential rate increases, Fort Worth remains at the lower end of the "affordable" range.